Blind Analysis Challenge Update

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VTX monthly meeting, April 14, 2009

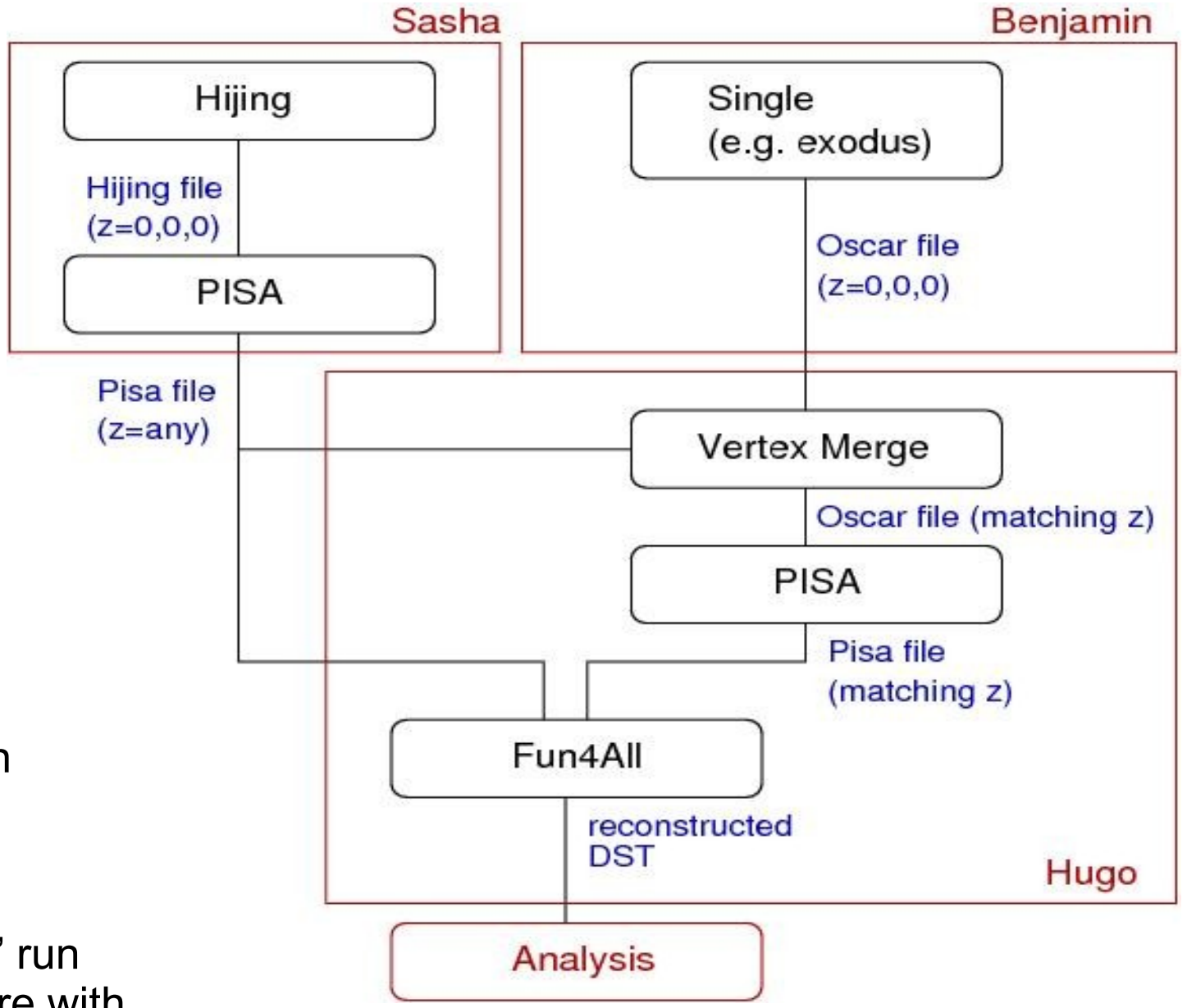
Quick Reminder

Merge unknown signal to Au+Au Hijing events and try to extract it back.

Vertex smeared with 1mm Gaussian in X and Y, and have flat distribution in Z from -10 to +10 cm. Vertex is synchronized in signal and Hijing files.

Merged files will have both muon and electron signals to save space and CPU time.

Could do a “calibration” run first, that is, test software with data containing a KNOWN amount of signal.



Current status

- Generated 500k minimum bias Hijing events.

- Processed ~80k events through PISA
  (this is the most CPU consuming part – few minutes per event).
  Files are kept in dcache:
  /pnfs/rcf.bnl.gov/phenix/phnxgen/blind_analysis_09/hijing
  Each Hijing event can be re-used.

- Hugo started merging and reconstruction procedure.
  - e/μ from open charm/bottom are merged to pythia p+p and reconstructed on disk in:
  /phenix/zdata05/phnxreco/phnxgen/blind_analysis_09/all/pythia/merged/simdst
  - for Hijing events vertex synchronization is being done.

VTX Readiness

PISA geometry is pretty much final and very realistic.
Detector response also very realistic, including noise, charge sharing, changeable thresholds, etc.

What's missing:

- Charge sharing and clustering in Z for strip layers.
- Charge diffusion for charge sharing (electron cloud).

- Reconstruction software is missing standalone tracking,
  not critical – can reconstruct clusters and run standalone tracking as a part of the analysis challenge.

- Need new global tracking (using VTX tracks instead of clusters).
  not critical.

- Alan discovered a problem with cluster coordinates in strip layers. Currently investigating.

- Everyone is using his/her own code. Need to organize.

VTX Manpower

Alan Dion – standalone tracking, global tracking (with ISU student Songyan Xu).

Richard Petti – charm/bottom separation in semileptonic channel.

Maki Kurosawa – gamma-jet correlations.

Matthew Lockner (ISU student).

Sasha Lebedev – charm/bottom separation, direct D^{O} measurement in $K\pi$ channel, general software development.

Kenichi Nakano, Manabu Togawa, others?